



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

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STATE PROJECT: 8.2261201 B-3682
FEDERAL PROJECT: BRSTP-1423(3)
COUNTY: Onslow
DESCRIPTION: Bridge No. 3 over Little Northeast Creek on SR 1423
SUBJECT: Geotechnical Report - Inventory

Project Description

The proposed project is located on SR 1423 at the existing bridge over Little Northeast Creek approximately 1 mile northeast of Piney Green. The roadway portion of the project will primarily consist of constructing the approaches for the new bridge. Based on the current plans, the existing alignment will be relocated approximately 120 feet south of the existing roadway. The investigation of subsurface conditions was confined to the corridor of proposed new construction.

The following base lines were investigated for this project:

<u>Line</u>	<u>Station</u>
-L-	10+00 to 36+00
-Y-	13+00 to 16+50

Areas of Special Geotechnical Interest

- 1) The entire project contains soft to medium stiff silt-clay soils which typically exhibit fair to poor engineering properties and may cause subgrade problems.

- 2) The following intervals were found to exhibit a high water table, seasonal high ground water or the potential for ground water related construction problems:

<u>Line</u>	<u>Station</u>
-L-	17+00 to 21+00
-L-	25+00 to 31+00
-L-	33+00 to 35+00

Physiography and Geology

The project corridor is located in Onslow County along existing SR 1423 between SR 1411 and SR 1413. Topography is typical of the Lower Coastal Plain and ranges from flat to gently sloping. Ground elevations typically range from 21 to 29 feet along the upland sections. The flood plain of Little Northeast Creek was encountered from -L- station 27+50± to 28+00±. Elevations of the flood plain range from 7 to 14 feet. The existing SR 1423 embankment in the flood plain lies at an elevation of 17± feet.

The geology of this region primarily consists of Recent to Pleistocene sediments consisting of silt-clay and granular sediments. Alluvial sediments in the flood plain consist of silt. The project area is drained by Little Northeast Creek that flows into the New River. Surface drainage is fair to poor throughout the proposed corridor due to the relatively flat terrain.

Ground Water

Ground water data was collected primarily in February 2002 during average rainfall conditions. During our investigation, the water table was generally 5 feet or more below the natural ground surface along the upland segments and within 1 to 3 feet of the natural ground surface in the flood plain.

Soils

Soils encountered during this investigation are separated into three major categories based on origin and published data. These categories are upland, alluvial soils and embankment soils.

Alluvial flood plain deposits, which exhibit very poor engineering properties, were noted from -L- station 27+50 to 28+00 and consist of 3± feet of soft silt (A-4). The bridge will span these soils. Loose to medium dense fine sand (A-2-4) occurs in the flood plain and underlies the silt soils.

The upland sediments primarily consist of 1 to 4 feet of soft to medium stiff clayey sandy silt (A-4) and silty sand (A-2-4) underlain by 4 or more feet of soft to medium stiff sandy and silty clay (A-6, A-7-6). Moisture content of tested silt-clay samples range from 22 to 31 percent. In deeper borings, medium stiff silt (A-4) and loose fine sand (A-2-4) underlie the clay soils. Fabric for soil stabilization and/or undercutting the upland cohesive soil may be required to assist in stabilizing portions of the new alignment.